

**Amendments to claims**

**This listing of claims will replace all prior versions and listing of claims in the application.**

**Please amend claims 1-43, 52 and 53 as shown.**

1. (currently amended): A polymeric membrane **prepared** ~~produced~~ by the method comprising:  
reacting a pre-polymer having a plurality of crosslinkable moieties, ~~and~~ **with** a  
polyfunctional crosslinking agent, ~~whereby~~ **wherein** the crosslinkable moieties are crosslinked  
with the polyfunctional crosslinking agent **and wherein the weight range of the polyfunctional  
crosslinking agent in the polymeric membrane is between about 1% and about 1,500% w/w.**
2. (currently amended): **The** A polymeric membrane according to claim 1, wherein the  
membrane is a hydrogel.
3. (currently amended): **The** A polymeric membrane according to claim 1, wherein the pre-  
polymer is formed from a homopolymer or a copolymer.
4. (currently amended): **The** A polymeric membrane according to claim 3, wherein the pre-  
polymer is substantially devoid of charge.
5. (currently amended): **The** A polymeric membrane according to claim 4, wherein the pre-  
polymer is hydrophilic and is water soluble.
6. (currently amended): **The** A polymeric membrane according to claim 5, wherein the  
crosslinkable moieties of the pre-polymer are hydroxy groups.
7. (currently amended): **The** A polymeric membrane according to claim 1, wherein the pre-  
polymer has a molecular weight range of about 10,000 to **about** 200,000.
8. (currently amended): **The** A polymeric membrane according to claim 7, wherein the pre-  
polymer has a molecular weight range of about 20,000 to **about** 30,000.

9. (currently amended): **The** A polymeric membrane according to claim 1, wherein the pre-polymer is a synthetic polymer formed by chain growth polymerization, condensation polymerization, or by both chain growth polymerization and condensation polymerization.

10. (currently amended): **The** A polymeric membrane according to claim 9, wherein the synthetic pre-polymer is selected from the group consisting of poly(vinyl alcohol), partially esterified poly(vinyl alcohols), copolymers of poly(vinyl alcohols), polymers of hydroxyethylmethacrylate and hydroxyethylacrylate, and polymers of glycidylacrylate and glycidylmethacrylate.

11. (currently amended): **The** A polymeric membrane according to claim 10, wherein the pre-polymer is poly(vinyl alcohol).

12. (currently amended): **The** A polymeric membrane according to claim 1, wherein the pre-polymer is a natural polymer.

13. (currently amended): **The** A polymeric membrane according to claim 12, wherein the natural pre-polymer is selected from the group consisting of starch, dextrans, cellulose derivatives, agarose, modified agaroses, and other polysaccharides.

14. (currently amended): **The** A polymeric membrane according to claim 1, wherein the polyfunctional crosslinking agent contains at least 2 functional groups that are capable of **reacting** ~~undergoing reaction~~ with the crosslinkable moieties of the pre-polymer to form covalent bonds.

15. (currently amended): **The** A polymeric membrane according to claim 1, wherein the polyfunctional crosslinking agent is substantially uncharged and does not **result in** ~~give rise to~~ a significant degree of charged groups via side reactions.

16. (currently amended): **The** A polymeric membrane according to claim 1, wherein the polyfunctional crosslinking agent is hydrophilic.

17. (currently amended): The A polymeric membrane according to claim 1, wherein the polyfunctional crosslinking agent is selected from the group consisting of dialdehydes, di-isocyanates, diacids, water soluble epoxides, diesters, diacid halides, free or etherified N-methylol ureas or N-methylol N-Methylol melamines, dihalogen compounds, epichlorhydrin, dianhydrides, dicarboxylic acids, citric acid, olefinic dialdehydes, phthalaldehyde, 1,3-dichloroacetone, and 1,3-dichloroisopropanol.

18. (currently amended): The A polymeric membrane according to claim 17, wherein the polyfunctional crosslinking agent is a dialdehyde.

19. (currently amended): The A polymeric membrane according to claim 19, wherein the polyfunctional crosslinking agent is selected from the group consisting of glutaraldehyde, 2-hydroxyhexane-1,6-dial 2-hydroxyhexanedial-1,6, malonic dialdehyde, succinic dialdehyde, and hexane-1,6-dial hexanedial-1,6.

20. (currently amended): The A polymeric membrane according to claim 19, wherein the polyfunctional crosslinking agent is glutaraldehyde.

21. (currently amended): The A polymeric membrane according to claim 1, wherein the pre-polymer is membrane is formed by crosslinking a poly(vinyl alcohol) and the polyfunctional crosslinking agent is with glutaraldehyde.

22. (currently amended): The A polymeric membrane according to claim 1, wherein the weight range of the polyfunctional crosslinking agent in the polymeric membrane is between about 1% and about 20% w/w pre-polymer is crosslinked at levels of about 1 to 20% w/w polyfunctional crosslinking agent/polymer chain.

23. (currently amended): The A polymeric membrane according to claim 1, wherein the comprising an aldehyde type polyfunctional crosslinking agent is a dialdehyde and wherein in the polymeric membrane the weight range of the dialdehyde wherein the aldehyde type polyfunctional crosslinking agent in the polymeric membrane is between about 1% and about 20% w/w.

24. (currently amended): The A polymeric membrane according to claim 23, wherein the percentage weight range of the dialdehyde aldehyde type polyfunctional crosslinking agent in the polymeric membrane is between about 4% [4] and about 15% w/w.

25. (currently amended): The A polymeric membrane according to claim 24, wherein the percentage weight range of the dialdehyde aldehyde type polyfunctional crosslinking agent in the polymeric membrane is between about 4.5% [4.5] and about 9.2% w/w.

26. (currently amended): The A polymeric membrane according to claim 1, wherein the further comprising a divinyl sulfone type polyfunctional crosslinking agent is a divinyl sulfone and wherein in the polymeric membrane the weight range of the divinyl sulfone wherein percentage weight range of the divinyl sulfone type polyfunctional crosslinking agent in the polymeric membrane is between about 20% and about 60% w/w.

27. (currently amended): The A polymeric membrane according to claim 26, wherein the percentage weight range of the divinyl sulfone type polyfunctional crosslinking agent in the polymeric membrane is between about 40% [40] and about 50% w/w.

28. (currently amended): The A polymeric membrane according to claim 27, wherein the percentage weight range of the divinyl sulfone type polyfunctional crosslinking agent in the polymeric membrane is about 45% w/w.

29. (currently amended): The A polymeric membrane according to claim 1 27, further comprising a divinyl sulfone type polyfunctional crosslinking agent in the polymeric membrane wherein the percentage weight range of the divinyl sulfone type polyfunctional crosslinking agent in the polymeric membrane is between about 45% [45] and about 50% w/w.

30. (currently amended): The A polymeric membrane according to claim 1, further comprising a glycidyl ether epoxide type polyfunctional crosslinking agent in the polymeric membrane wherein the polyfunctional crosslinking agent is a glycol diglycidyl ether and wherein the percentage weight

range of ~~the glycol diglycidyl ether a glycidyl ether epoxide type polyfunctional crosslinking agent~~ in the polymeric membrane is between about ~~500%~~ 500 and ~~about 1,500~~ 1500% w/w.

31. (currently amended): The A polymeric membrane according to claim 1, wherein the percentage of the pre-polymer in the membrane is ~~in the range of about 5% {5}~~ to about 40% w/w.

32. (currently amended): The A polymeric membrane according to claim ~~31, 31~~ wherein the percentage of the pre-polymer in the membrane is ~~in the range of about 10% {10}~~ to about 20% w/w.

33. (currently amended): The A polymeric membrane according to claim 1, wherein the membrane is supported by a substrate.

34. (currently amended): The A polymeric membrane according to claim ~~33, 33~~ wherein the substrate is a woven material, a non-woven material, or a textile.

35. (currently amended): The A polymeric membrane according to claim 33, wherein the substrate is in the form of a sheet or web.

36. (currently amended): The A polymeric membrane according to claim 33, wherein the polymeric membrane is a layer formed on the surface of the substrate, or the substrate is incorporated within the polymeric membrane.

37. (currently amended): The A polymeric membrane according to claim 33, wherein the substrate is formed from a material selected from the group consisting of poly(vinyl alcohol) ~~polyvinyl alcohol~~, polyethyleneterephthalate, nylon and fibreglass, cellulose, and cellulose derivatives.

38. (currently amended): The A polymeric membrane according to claim 37, wherein the substrate is heat bonded polyethyleneterephthalate, optionally pre-treated with a non-ionic surfactant.

39. (currently amended): The A polymeric membrane according to claim 33, wherein the substrate has hydrophilic characteristics.

40. (currently amended): **The** A polymeric membrane according to claim 39, wherein the substrate is **poly(vinyl alcohol)** ~~polyvinyl alcohol~~ paper.

41. (currently amended): **The** A polymeric membrane according to claim 1, wherein the crosslinkable moieties are treated with a coordinating agent.

42. (currently amended): **The** A polymeric membrane according to claim 41, wherein the coordinating agent is in the form of a buffer.

43. (currently amended): **The** A polymeric membrane according to claim 41, wherein the coordinating agent is borate.

44. (withdrawn): A method for forming a polymeric membrane, comprising the steps of:  
providing a pre-polymer having a plurality of crosslinkable moieties; and  
contacting the pre-polymer with a polyfunctional crosslinking agent;  
wherein the crosslinkable moieties are crosslinked with the polyfunctional crosslinking agent.

45. (withdrawn): A method for separating molecules comprising the steps of:  
providing a polymeric membrane formed by reacting a pre-polymer having crosslinkable moieties with a polyfunctional crosslinking agent, wherein the crosslinkable moieties are crosslinked with the polyfunctional crosslinking agent; and  
subjecting the polymeric membrane and a sample to a separation technique so as to separate the molecules.

46. (withdrawn): A method according to claim 45, wherein the molecules to be separated are a charged species, or a species capable of bearing a charge.

47. (withdrawn): A method according to claim 46, wherein the molecule is a bio-molecule.

48. (withdrawn): A method according to claim 47, wherein the bio-molecule is selected from the group consisting of protein, peptide, DNA and RNA.

49. (withdrawn): A method according to claim 45, wherein the separation technique is an electrophoretic technique.

50. (withdrawn): A method according to claim 49, wherein the electrophoretic technique allows for the separation of molecules on the basis of size, charge, or both size and charge.

51. (withdrawn): A method according to claim 45, wherein the sample contains a protein and a borate in solution is used to concentrate the protein sample.

52. (currently amended): A cartridge suitable for use in an electrophoretic device, **comprising** ~~the cartridge incorporating a~~ **the** polymeric membrane **according to** ~~in accordance with~~ claim 1.

53. (currently amended): An electrophoretic device comprising at least one polymeric membrane **according to** ~~in accordance with~~ claim 1 disposed between two membranes.